Completed Return-On-Investment Project Case Study

United States Department of Energy
Office of Environmental Management
Fact Sheet

Passive Aerosol Capture Coating

Savannah River Site, South Carolina

Original Problem

A highly contamnated process cabinet used for plutonium recovery operations required cleanout and major modifications for conversion to accommodate a new mission. Cabinet panels would be removed and all process equipment in the cabinets would be bagged out. This work would create high levels of air-borne alpha contamination resulting in the containment hut, personnel protective equipment and air suits, and all job control waste being contaminated to levels requiring management as transuranic waste.

The ROI Project Solution

A commercial nuclear service company (Encapsulation Technologies, Los Angeles, California) was contracted to use passive aerosol fogging technology to coat all surfaces with a special sugar-based solution that fixes contamination to reduce air-borne contaminate levels.

DOE Monetary Benefits	
Cost	17,000
Lifecycle Savings	275,000
Return on Investment	1,500 %

Value Of Improvement

Fixing the alpha contaminates reduced worker risks and allowed all job waste (except for the process equipment removed from the cabinets) to be classified as LLW avoiding 6.5 m3 of TRU waste generation and improved worker efficiency due to less required radiological controls for the job. Cost savings for this job due to the coating was calculated at $275,000.

Lifecycle Waste Reduction	
Life Cycle Waste Reduction	6.5 m3
Operation Commencement Date	5/98
Project Useful Life (Years)	1

Benefits At-A-Glance

- Reduces human exposure to radiological hazards by fixing contaminates.
- Reduces generation of highly contaminated job control waste.
- Increases job productivity due to reduced radiological controls.
- Technology is applicable to other similar work in the DOE complex.

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Summary Data

ROI Priority Area:	**New Generation**
ROI Project Type:	**Source Reduction**
Project Cost:	**$17,000**
Lifecycle Savings:	**$275,000**
Implementing Group:	EM, SRS Nuclear Materials Stabilization Division
Benefiting Group:	EM, SRS Nuclear Materials Stabilization and Solid Waste Divisions
Useful Life Years:	**1 Year (Based on one deployment, multiple deployments are possible)**
Return On Investment:	**1,500 %**
Lifecycle Waste Reduction:	**6.5 m3 of TRU waste (Based on single deployment)**

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